



A Bibliometric Analysis of Workplace Stress, Digital Dependency, and Digital Fatigue Research: Trends, Themes and Future Research Directions

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ABSTRACT

This study presents a bibliometric analysis of the literature on workplace stress, technostress, digital dependency and digital fatigue, with particular attention to Generation Z and Millennial employees in the information technology sector. Drawing on a curated corpus of 210 sources published between 1984 and 2026 (152 peer-reviewed journal articles, 33 books and edited volumes, 12 doctoral and master's theses, 12 conference papers, and 1 book chapter), the review maps publication trends, source-type composition, dominant publication venues, prolific contributing authors, and the thematic structure of the field through keyword co-occurrence network analysis. Annual output rose from a single publication in 1984 to a peak of 22 sources in 2024; sources published from 2019 onward account for 125 of the 203 dated entries, or 61.6 percent of the dated corpus. A network of 51 keywords, each recurring in at least three sources, resolves into five thematic clusters: psychological and personal-life symptoms of overload; technostress creators and health impairment; organizational outcomes of technostress; digital fatigue and work design; and coping and disengagement behaviors. Overlaying the average publication year of each keyword onto the co-occurrence network indicates a temporal shift in research emphasis, from organisational-outcome variables such as turnover intention and work exhaustion, which were more prominent in the literature prior to 2015, toward emerging constructs such as digital fatigue, well-being, and techno-uncertainty, which have gained greater prominence in studies published after 2022. Despite this volume of activity, keyword-based thematic classification identifies only five of the 210 sources as directly addressing the Indian IT sector and only one as addressing AI-era technostress within the present corpus, leaving the comparison of digital dependency and digital fatigue between Generation Z and Millennial employees in the Indian IT sector largely unexamined.

Keywords— Bibliometric Analysis, Generation Z and Millennial, Indian IT, Digital Fatigue Research.

1. Introduction

Workplace stress research has followed the pace of workplace technology itself. Brod (1984) named the underlying condition “technostress” three years before the World Wide Web existed, and the term has since accumulated a literature broad enough that no single reviewer can read all of it directly. Bibliometric analysis exists for exactly this situation: rather than reading each study individually, it maps a corpus as a whole, showing how much has been published, where, by whom, and around which concepts a field has organised itself (Nastjuk, Trang, Grummeck-Braamt, Adam & Tarafdar, 2024).

This review applies that method to a specific problem. Two overlapping bodies of research, one on technostress and digital dependency, the other on generational differences in the workplace, have developed largely on separate tracks. The technostress literature since Tarafdar, Tu, Ragu-Nathan and Ragu-Nathan (2007) has built and refined a measurable model of stressors, mostly on general working-age samples. The generational literature since Twenge (2017, 2023) has documented cohort-level shifts in technology use and mental health, mostly outside the workplace. Very little work brings these two strands together within a single occupational setting, and even less research examines this intersection within the Indian information technology sector, which provides an important context for investigating technology-related work demands, digital dependency, and fatigue among younger employee cohorts and operates under delivery and availability norms that differ from the Western contexts most of this literature was built on.

The purpose of this paper is to map that gap empirically rather than assert it. Using a corpus of 210 sources compiled for a related systematic literature review, this paper asks four questions. First, how has annual output on workplace stress, digital dependency and digital fatigue grown since 1984, and where does that growth accelerate? Second, what mix of source types carries this literature, and which venues and authors are most active within it? Third, what thematic structure emerges when the field's own keywords are treated as a network rather than read one paper at a time? Fourth, how much of this literature addresses the Indian IT sector specifically, and does any of it treat digital dependency and digital fatigue as a single, generationally compared outcome?

Section 2 describes the corpus and the bibliometric methods used, including the construction of the keyword

co-occurrence network and its limitations. Section 3 reports the findings and results. Section 4 discusses what these patterns mean for the field's trajectory and for the specific gap this review identifies. Section 5 states the study's limitations, and Section 6 concludes.

2. Methodology

2.1 Corpus Construction

The corpus analysed in this study was originally assembled as part of a broader systematic literature review examining workplace stress, digital dependency, digital fatigue, generational differences, and related phenomena among employees in the information technology sector. The file organizes sources into five keyword clusters: Workplace Stress, Digital Dependency, Digital Fatigue, Generation Z and Millennials, and IT Sector. The resulting corpus comprises 210 sources published between 1984 and 2026.

Sources were identified through searches of Scopus, Web of Science, ResearchGate, Shodhganga, and relevant publicly available academic journals. The search was supplemented by cross-referencing established anchor studies in the workplace stress, technostress, digital fatigue, and generational-cohort literature. The final corpus was subsequently examined using publication-year, source-type, publication-venue, author-productivity, thematic-cluster, and keyword co-occurrence analyses.

2.2 Inclusion and Exclusion

Studies were included when they met one or more of the following criteria:

- a) They examined workplace stress, technostress, digital dependency, digital fatigue, technology-related exhaustion, or closely related constructs.
- b) They addressed employees, workers, or occupational settings, particularly within technology-intensive work environments.
- c) They examined Generation Z, Millennials, generational differences, or technology-related behaviours relevant to these cohorts.
- d) They provided evidence relevant to the IT sector or technology-mediated work.
- e) They were peer-reviewed journal articles, books or edited volumes, doctoral/master's theses, conference papers, or independently verifiable scholarly sources.
- f) The source contained sufficient bibliographic and substantive information to permit classification within the review corpus.

Sources were excluded when they were unrelated to the principal constructs of the review, lacked sufficient scholarly or bibliographic information for verification, duplicated another record, or consisted primarily of non-academic industry or consultancy material. Industry and consultancy statistics circulating in trade media were therefore excluded from the corpus, although such material may be used separately for contextual discussion where appropriately attributed.

2.3 Thematic Cluster Classification

Each source was assigned to one of eight thematic clusters, adapted from the source corpus's existing thematic map (technostress construct and measurement; digital dependency and problematic use; boundary blurring and recovery failure; digital and video conference fatigue; generational cohort research; Generation Z at work; Indian IT sector evidence; AI-era technostress), or to a residual "other/cross-cutting" category. Classification used keyword matching against each source's recorded variables and venue text, assigning each source to whichever cluster scored the most keyword hits. This is a single-best-match classification: a source addressing more than one cluster is counted once, under its strongest match, which is why the results also report a second, non-exclusive view of the same corpus through keyword co-occurrence network analysis.

2.4 Keyword Co-occurrence Network

The "variables" field recorded for each source, a short list of the constructs it studies, was tokenised into individual keyword phrases (split on commas and semicolons, lower-cased, trimmed) and lightly normalised to merge near-duplicate spellings, for example "wellbeing" and "well-being." Terms appearing in fewer than three sources were excluded from the network analysis. Following application of this threshold, 53 terms met the minimum occurrence criterion; two of these were subsequently removed because they were fully isolated and had no co-occurrence links with the remaining terms. The final network therefore comprised 51 connected keywords. Two terms were linked by an edge if they co-occurred in the same source's variables field, weighted by the number of sources in which the co-occurrence appeared.

The network was clustered using greedy modularity maximisation (Clauset, Newman & Moore, 2004) and laid out with a force-directed algorithm, the same underlying logic VOS viewer applies through its own VOS technique (Van Eck & Waltman, 2010).

3. Findings & Results

3.1 Publication Trend

Figure 1 plots the number of sources by publication year. A single source, Brod (1984), predates the rest of the corpus by thirteen years; the next is Weil and Rosen (1997). Output remained in the low single digits through the early 2000s, crossed five sources per year for the first time in 2007, and held in the five-to-seven range for most of the following decade. A first local peak of 11 sources appears in 2017, followed by a dip to 6 in 2018 and a sustained climb from 2019 onward: 13 sources in 2019, 20 in 2021, coinciding with the pandemic-era surge in videoconference fatigue research, 15 in 2022, 14 in 2023, and a corpus peak of 22 in 2024. The 2026 figure of 14 reflects only sources indexed through the middle of that year and should not be read as a decline. Overall, 125 of the 203 dated sources (61.6 percent) were published from 2019 onward, against 21 sources (10.3 percent) before 2010, confirming that this is a young and still-accelerating literature rather than a mature one.

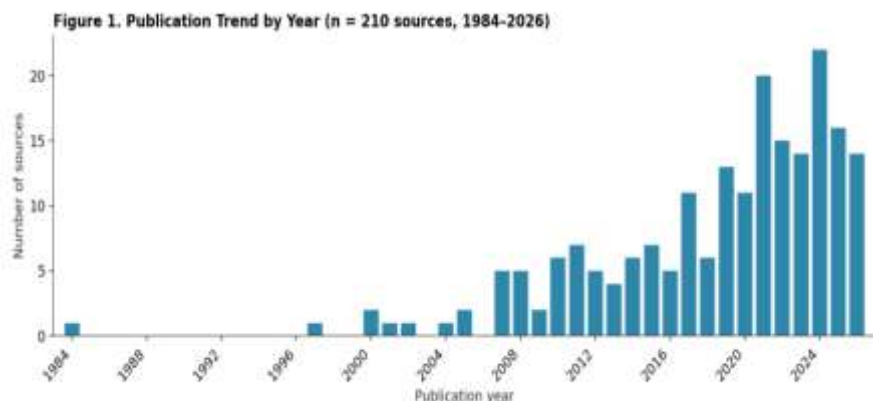


Figure 1. Publication trend by year (n = 210 sources)

3.2 Source-Type Distribution

Journal articles dominate the corpus, accounting for 152 of 210 sources (72.4 percent). Books and edited volumes contribute 33 sources (15.7 percent), followed by 12 doctoral and master's theses (5.7 percent), 12 conference papers (5.7 percent), and 1 book chapter (0.5 percent). The small but non-trivial thesis and conference paper share indicates that a meaningful part of this field's most current work has not yet passed through journal peer review, which is consistent with the field's own recent bibliometric self-assessment (Nastjuk et al., 2024) that the area continues to expand faster than it consolidates.

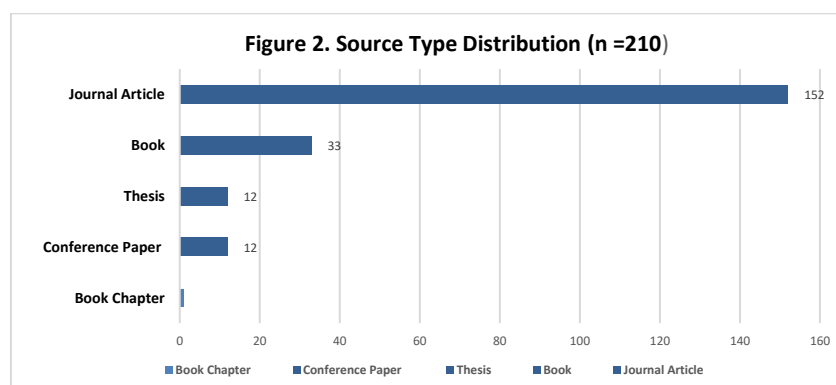


Figure 2. Distribution of the corpus by source type (n = 210).

3.3 Publication Venues

No single venue dominates the field. Computers in Human Behavior and Frontiers in Psychology each contribute 7 sources, the corpus maximum, followed by the Journal of Occupational Health Psychology (6), MIS Quarterly, the International Journal of Environmental Research and Public Health, and Computers in Human Behavior Reports (5 each), and the Journal of Management Information Systems (4). This spread across psychology, occupational health, and information-systems venues reflects the field's origin at the intersection of at least three disciplines, which is itself a source of the definitional inconsistency La Torre, Esposito, Sciarra and Chiappetta (2019) documented in their systematic review of technostress measures.

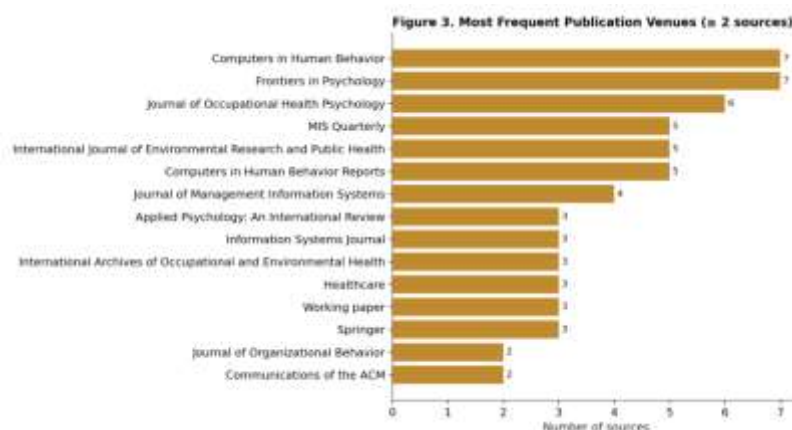


Figure 3. Most frequent publication venues, restricted to venues contributing two or more sources.

3.4 Author Productivity

Mohamed Tarafdar and Jean Twenge are the corpus's most prolific first authors, each contributing 4 sources; Gloria Mark and an Indian doctoral author sharing the surname Sharma each contribute 3. A further sixteen authors contribute 2 sources each. The corpus is not concentrated around a small set of repeat contributors: of the 180 distinct first authors identified, fewer than one in nine appear more than once, which is typical of a field still in its expansion phase rather than one organised around a small, stable set of programmatic research groups.

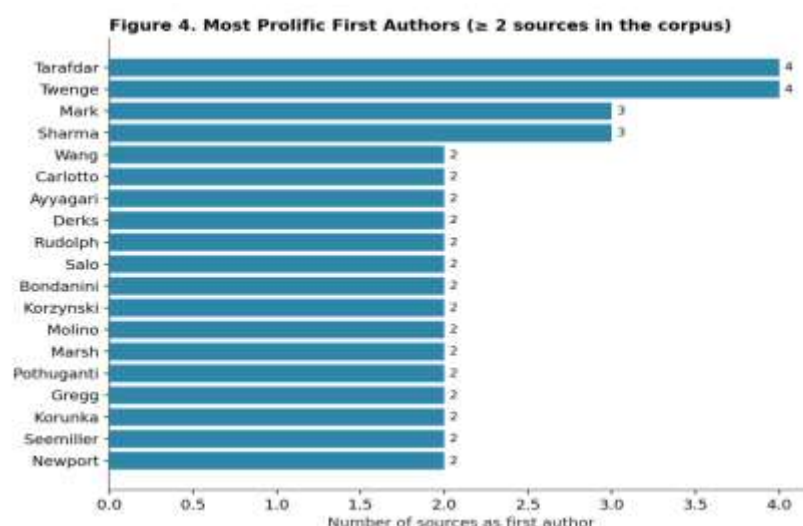


Figure 4. Most prolific first authors, restricted to authors contributing two or more sources.

3.5 Thematic Cluster Distribution

Single-best-match keyword classification assigns 48 sources to the workplace Stress/ technostress construct and measurement cluster, the corpus's largest identifiable theme, followed by boundary blurring and recovery failure (22 sources), digital dependency and problematic use (21), generational cohort research (16), digital and videoconference fatigue (15), Generation Z at work (12), Indian IT sector evidence (5), and AI-era technostress (1 source). The remaining 70 sources (33.3 percent) did not score a clear match against any of the eight clusters and are classified as other or cross-cutting; this is expected of a single-best-match method applied to a literature that increasingly blends themes (for instance, a study of digital fatigue among Gen Z employees touches at least three of the eight clusters simultaneously) and is the reason Section 3.6 reports a second, overlapping view of the same corpus.

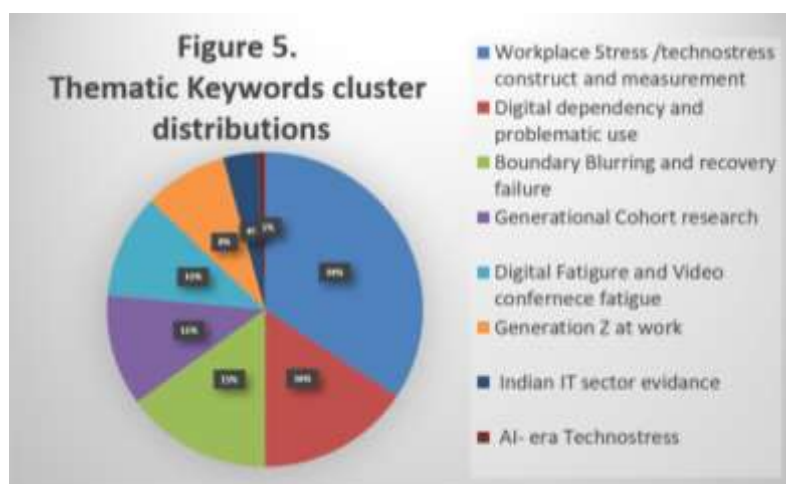


Figure 5. Thematic cluster distribution by single-best keyword match (n = 210).

3.6 Keyword Co-occurrence Network

Figure 6 presents the final keyword co-occurrence network, comprising 51 connected keywords after the removal of two fully isolated terms from the 53 terms that met the minimum occurrence threshold. Greedy modularity maximisation identified five thematic clusters within the network. The largest (17 terms) groups psychological and personal-life symptoms of overload: anxiety, burnout, depression, stress, digital stress, fear of missing out, sleep quality, multitasking, work-life balance and Gen Z workplace expectations. A second cluster (12 terms) centres on technostress and health or performance impairment: technostress, techno-overload, techno-invasion, techno-uncertainty, mental health, distress and work performance. A third cluster (10 terms) covers the organisational outcomes most associated with the original technostress creators' model: technostress creators, techno-stressors, job satisfaction, organisational commitment, turnover intention and work exhaustion, directly reflecting the framework introduced by Tarafdar et al. (2007) and extended by Ragu-Nathan, Tarafdar, Ragu-Nathan and Tu (2008). A fourth cluster (8 terms) groups digital fatigue with work-design variables: digital fatigue, productivity, autonomy, remote work, well-being and work-family conflict. A fifth, smaller cluster (4 terms) covers coping and disengagement behaviours: cyberloafing, emotional exhaustion, work stress and age. The technostress creators node and the productivity, burnout and anxiety nodes are the network's largest and most connected, consistent with their role as the field's most repeated constructs across three decades of study.

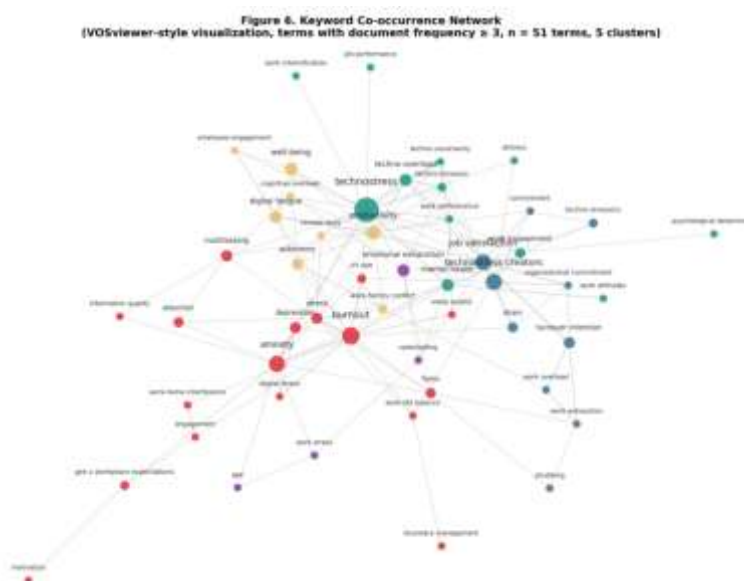


Figure 6. Keyword co-occurrence network,

3.7 Keyword Overlay by Publication Recency

Figure 7 recolours the same network by each keyword's average publication year rather than its cluster. The contrast is direct. Nodes with the oldest average year, coloured dark blue to purple, include work overload, work exhaustion, and psychological detachment, all organisational-outcome variables tied to the original

2000s and early-2010s technostress and boundary-management literature (Moore, 2000; Ahuja, Chudoba, Kacmar, McKnight & George, 2007; Sonnentag & Fritz, 2007; Derks & Bakker, 2014). Nodes with the most recent average year, coloured bright yellow, include digital fatigue, well-being, employee engagement and techno-uncertainty, concentrated in sources published after 2022. This shift is not merely a relabelling of the same phenomenon; it indicates the field's attention has moved from the downstream organisational consequences of technostress toward the upstream experiential and wellbeing-centred construct of fatigue itself, a shift also visible qualitatively in the field's own recent literature (Nastjuk et al., 2024).

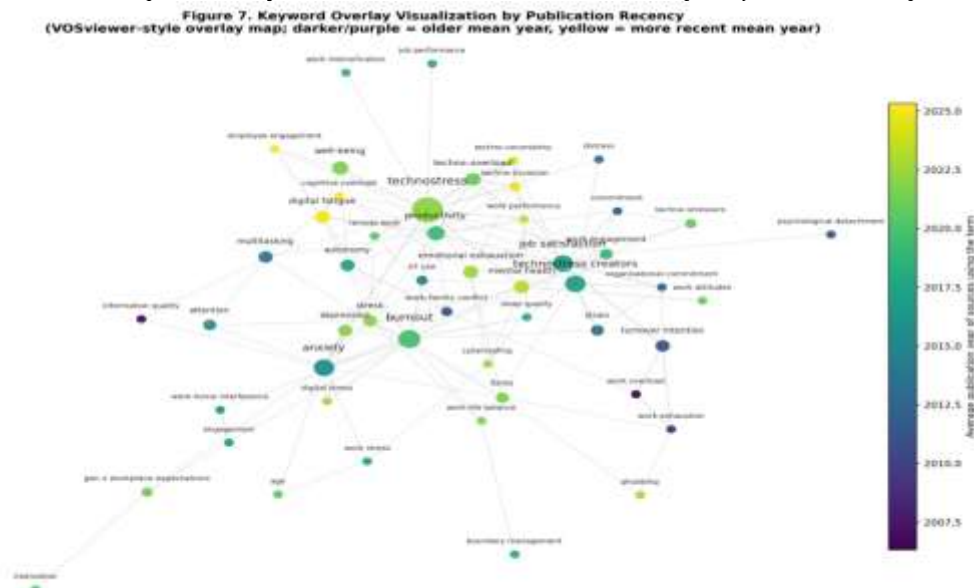


Figure 7. Keyword overlay visualisation by average publication year

4. Discussion

4.1 A Field in Transition, Not Yet Converged

The publication trend in Figure 1, read together with the recency overlay in Figure 7, describes a field in the middle of a transition rather than one that has settled on a stable object of study. The 2007 to 2011 period established technostress as a measurable construct built from organisational outcomes (Tarafdar et al., 2007; Ragu-Nathan et al., 2008; Ayyagari, Grover & Purvis, 2011; Tarafdar, Tu & Ragu-Nathan, 2010), and the boundary-management and recovery literature of the same decade explained why the harm persists after hours (Chesley, 2005; Sonnentag & Fritz, 2007; Derks & Bakker, 2014; Derks, van Mierlo & Schmitz, 2015; Hu, Santuzzi & Barber, 2019). Both strands centre on organizational outcomes such as turnover, commitment, and exhaustion, which the overlay map shows becoming less prominent in the network's most recent region. What has replaced it since 2020 is not a competing theory so much as a different unit of analysis: digital fatigue, well-being and techno-uncertainty describe an experience rather than a downstream consequence, and the field has not yet reconciled this newer, experience-centred vocabulary with the older, outcome-centred one it grew from. This definitional inconsistency is documented directly by La Torre et al. (2019) and is also evident in the broader field-level synthesis provided by Nastjuk et al. (2024).

4.2 Generational Research and Technostress Research Remain Separate Literatures

The thematic cluster distribution in Figure 5 makes a second pattern visible. Generational cohort research (16 sources) and Generation Z at work (12 sources) together form a body of work nearly as large as digital dependency and boundary blurring combined, yet the keyword network in Figure 6 shows almost no direct co-occurrence between generational terms and the technostress-creators cluster. Twenge's cohort-level work (2017, 2023) and the practitioner and academic literature on Gen Z's workplace entry (Turner, 2015; Schroth, 2019; Chillakuri, 2020; Gabrielova & Buchko, 2021; Aggarwal, Sadhna, Gupta, Mittal & Rastogi, 2022; Barhate & Dirani, 2022) describe a cohort with distinct baseline anxiety, technology fluency and workplace expectations, but almost none of it measures technostress, digital dependency or digital fatigue directly within that cohort using the instruments the technostress literature itself validated. The generational literature and the technostress literature have, in effect, been asking adjacent questions without sharing a measurement framework, which is the same separation Deal, Altman and Rogelberg (2010), Costanza, Badger, Fraser, Severt and Gade (2012), Lyons and Kuron (2014), Rudolph, Rauvola and Zacher (2018) and Rudolph and Zacher (2020) have each, in their own way, flagged as a methodological problem for generational research in general: cohort claims rarely carry the same construct rigour as the outcome variables they are compared against.

4.3 Underrepresentation of Indian IT and AI-Era Research

The two smallest clusters in Figure 5, Indian IT sector evidence (5 sources) and AI-era technostress (1 source), are not an artefact of the keyword classification method; both remain small under the network view in Figure 6 as well, where terms specific to either theme barely surface among the 51 most recurring keywords in the entire 210-source corpus. What Indian evidence exists (Srivastava, Chandra & Shirish, 2015; Chandra, Shirish & Srivastava, 2019; Upadhyaya & Vrinda, 2021) establishes that the technostress creators framework transfers to Indian IT settings, but none of it is generationally comparative, and none of it measures digital dependency and digital fatigue as a joint outcome. The single AI-era source identified in this corpus, The single AI-era source identified in this corpus is a 2026 study published in Merits examining Gen Z workers' AI acceptance, is suggestive rather than conclusive; Nastjuk et al. (2024) name AI-specific stressors as an open item on the field's own research agenda, and this corpus confirms almost nothing has yet filled it. Together, these two gaps are not a matter of insufficient search effort in this review; they describe where the field itself has not yet gone.

5. Limitations

Three limitations bear directly on how these results should be read. First, although the corpus was originally assembled for a broader systematic literature review, the present bibliometric study uses a curated corpus derived through targeted searches and cross-referencing rather than a standardized database export. Consequently, the publication counts, venue frequencies, and thematic distributions reported here describe the 210-source analytical corpus and should not be interpreted as exhaustive estimates of the entire technostress and digital fatigue literature; a Scopus or Web of Science search on the same terms would likely surface additional sources, particularly outside the clusters this review's original sourcing prioritised. Second, the absence of citation data means influence within the field could not be assessed; a source's presence or centrality in the keyword network reflects how often its stated variables recur across the corpus, not how often the source itself has been cited by others. Third, the keyword co-occurrence network is built from short, author-supplied variable lists rather than full-text keyword extraction or a controlled vocabulary, which means the network reflects how sources describe their own variables rather than a standardised ontology; two sources studying the same underlying construct under different vocabulary (for example, "technostress" against "technostress") may appear more distant in the network than they are conceptually.

6. Conclusion

This bibliometric analysis maps a young, still-accelerating field: 61.6 percent of the corpus's dated output was published from 2019 onward, spread across more than a hundred venues with no single dominant research group. Keyword network analysis resolves the field into five recurring thematic clusters and shows a clear directional shift, from organisational-outcome variables dominant before 2015 toward digital fatigue and well-being variables dominant after 2022. Against this backdrop of volume and thematic movement, two structural gaps stand out precisely because the surrounding literature is otherwise so active: only 5 of 210 sources address the Indian IT sector, and only 1 address AI-era technostress, and none combine digital dependency and digital fatigue as a joint, generationally compared outcome in any single sample. These gaps provide a clear rationale for further empirical investigation of digital dependency and digital fatigue among Generation Z and Millennial employees in the Indian IT sector.

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